

What is the impact of the various types of power plants on the environment?

Date : November 16, 2017



A coal thermal power plant produces specific emissions (per unit of electricity production) which are 5-10 times higher than those of a nuclear power plant. Coal always contains naturally occurring radioactive material – thorium, two long-lived isotopes of uranium and products of their decay (including radiotoxic radium, radon and polonium) and a long-lived radioactive isotope of potassium – potassium-40. The process of coal combustion results in the emission of almost all of these elements into the surrounding environment.

On the other hand, the protective barriers of an NPP's safety system effectively prevent the emission of radioactive materials and substances contained in the nuclear fuel and generated

during the operation of the reactor; only an insignificantly small amount of short-lived radioactive gas, having very low radiotoxicity is emitted into the environment.

Furthermore, a significant portion of coal natural radionuclides is piling up in slag dumps of TPPs and when washed with water they reach human beings through the food chain. There are up to 100 grams of radioactive substances in 1 tonne of ash from TPPs. This channel of toxic substance distribution is absolutely excluded at NPPs since remote handling technology of spent irradiated nuclear fuel from the reactor (SNF) excludes its direct contact with the external environment.

Generally speaking, the radiation impact on the population from TPPs is approximately 20 times higher than that of NPPs of equal capacity (although in both cases, it is, of course, much smaller than the impact of natural background radiation).